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# Assessment of psychometric characteristics and quality of life in adult and elderly patients with rheumatoid arthritis

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**Abstract**
**Introduction:** Rheumatoid arthritis (RA) is characterised by persistent joint inflammation and cartilage and bone damage with significant activity limitation, reduction in the Quality of Life (QoL), and often systemic complications. In recent years, there have been many advances in diagnostic and treatment modalities available for RA with better access to tertiary care centres in our country. The study aimed to analyse the present-day clinical profile of patients of RA reporting to a tertiary care centre in this part of India.
**Material and methods:** This prospective observational, hospital-based study was carried out in a tertiary care teaching Mahavir Institute of Medical Sciences, Vikarabad over a period of six months. All diagnosed consecutive cases of RA visiting our OPD or admitted inwards were examined. The patients were diagnosed for RA based on the American College of Rheumatology Criteria-201. Detailed clinical history and examination along with inflammatory markers were analysed. The following instruments were used: The tools include the Medical Outcomes Study Short Form-36 (SF-36), The Western Ontario and McMaster (WOMAC) index, a disease-specific measure, was used to assess functional disability. Mini-International Neuropsychiatric Interview (MINI): The Mini-International Neuropsychiatric Interview (MINI) is a short diagnostic structured interview as per the Diagnostic and Statistical Manual (DSM-IVTR) diagnostic criteria.
**Results:** The results indicated that there was a statistical difference in the QoL between subjects with RA and healthy population according to SF-36 Croatian norms. Also, the results showed that severe pain experience was significantly associated with poorer social functioning assessment. The RA group had significantly lower QoL scores in the psychological and environmental domains of QoL; life satisfaction scores were also significantly lower in the RA group when compared to control subjects.
**Conclusion:** QoL and functional capacity in RA were affected in adults and the elderly. However, the results showed a significant difference between groups. There were significant proportions of patients who presented with high disease activity.

**Keywords:** psychometric characteristics, quality of life, rheumatoid arthritis

## Introduction

Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease. The course of the disease is variable. A substantial percentage of the population presents with persistent pain, stiffness, progressive joint destruction, functional disability, and progressive morbidity and mortality [1]. The disease is characterised by persistent joint inflammation and cartilage and bone damage with significant limitation of activity, reduction in the quality of life and often systemic complications [2]. There have been many advances in diagnostic and treatment modalities available for RA in recent years with better access to tertiary care centres. The study aimed to analyse the present-day clinical profile of patients of RA reporting to a tertiary care centre in this part of India.

RA is a detrimental disease with articular, extra-articular, as well as many other systemic complications. Many comorbidities can be observed in RA patients, including anaemia, cardiovascular diseases, lymphoma, cancers, renal disease, endocrinal diseases, infections, lung diseases, and neuropsychiatric disorders. It causes disastrous financial losses as well as a significant public health problem [1-3]. This can be avoided by early diagnosis and regular treatment, and follow-up of the RA patients. Chronic pain leads to mental and social insecurity by increasing absenteeism in the workplace and bed occupying days. Patients with rheumatic symptoms are very often mismanaged and misdiagnosed. They routinely come at a late stage in a tertiary care centre with already developing more complex symptoms. However, the fact is that early diagnosis can help patients to lead better QoL [4].

The major problem lies in a lack of complete understanding of the aetiology of the RA; treatment modalities do not help in halting the progression of the disease, but they help in symptomatic improvement. Treatment includes pain management, prevention, and treatment of permanent joint destruction. Analgesics, steroids, exercise, and physiotherapy are currently the mainstay of the therapy, but no satisfactory response has been achieved in most patients [5]. Many patients use complementary and alternative medicine (CAM) in India for chronic ailments like RA. RA has a significant impact on the quality of life due to decreased functioning, and patients often have psychological distress and decreased social functioning.

Very few studies have been carried out in India, targeting existing practices for RA management. Therefore, the present study has been designed to evaluate psychometric characteristics and quality of life in patients with rheumatoid arthritis.

## Materials and methods

A total number of 30 patients diagnosed with RA and 30 healthy individuals considered control subjects, from both gender between the age of 22 and 65 years, were included in this study. In our study, the normal healthy individuals accompanying orthopaedic patients who were visiting/admitted in the OPD and Emergency departments of Mahavir Institute of Medical Sciences, Vikarabad, were formally enrolled for this study. All participants were briefed and adequately advised in the local language, and their written informed, voluntary consent was obtained. All the enrolled subjects were subjected to a careful history, general and systemic physical examination. The questionnaire recorded information on gender, age, height, weight and comorbidity status (such as hypertension, diabetes mellitus and any other metabolic disorder) and medication use, including nutritional supplementation. The height and weight of the individuals were used to calculate the body mass index (BMI).

Our study was a prospective longitudinal study; this was designed to study persons diagnosed with RA. These patients were routinely followed up to 3 months for the study duration.

**Questionnaire:** The following instruments were used: The tools include the Medical Outcomes Study Short Form-36 (SF-36), The Western Ontario and McMaster (WOMAC) index, a disease-specific measure, was used to assess functional disability. Mini-International Neuropsychiatric Interview (MINI): The Mini-International Neuropsychiatric Interview (MINI) is a short diagnostic structured interview as per the Diagnostic and Statistical Manual (DSM-IVTR) diagnostic criteria.

**Statistical Analysis:** All these consolidated data were analysed using SPSS software. The Student t-test and the Mann-Whitney test were used for comparative analyses of serum biomarkers. The p-value of $<0.05$ was taken to be statistically significant.

## Results

In this study, the mean (±SD) age of the subjects was 44.27 (±21.71) years, most 9 (30%) of whom belonged to the 50–59 years age group. The proportion of female subjects was 55%. All unmarried, widow and separated participants were female. Positive family history of RA in 43.33% of participants.

**Table 1:** General Demographic features of healthy control group and Rheumatoid arthritis (RA) patients' group.

| Parameters | | Control Group (n=30) | Patient Group (n=30) |
|---|---|---|---|
| Age (Years) | 20-29 | 2 | 3 |
| | 30-39 | 5 | 6 |
| | 40-49 | 7 | 5 |
| | 50-59 | 9 | 7 |
| | 60-69 | 6 | 7 |
| Gender | Male | 13 | 14 |
| | Female | 17 | 16 |
| Marital Status | Married | 23 | 24 |
| | Unmarried | 4 | 2 |
| | Widowed/Divorced | 3 | 4 |
| Education Level | Illiterate | 2 | 3 |
| | Up to 10$^{th}$ std. | 11 | 13 |
| | Graduate | 9 | 8 |
| | Postgraduate | 8 | 6 |
| Socioeconomic status | Lower | 6 | 6 |
| | Middle | 17 | 19 |
| | Upper | 7 | 5 |
| Occupation | Home maker | 13 | 12 |
| | Service | 8 | 6 |
| | Self-employed | 5 | 9 |
| | Retired | 4 | 3 |
| Residence area | Rural | 18 | 16 |
| | Urban | 12 | 14 |
| Family history of RA | Yes | 22 | 4 |
| | No | 8 | 26 |

Our study showed there was a positive correlation between pain and WOMAC score, which indicates that an increase in the intensity of pain increases the functional disability in RA patients.

**Table 2:** The Western Ontario and McMaster (WOMAC) index under various parameters in healthy control group and Rheumatoid arthritis (RA) patients' group.

| Parameters | Control Group (n=30) | Patient Group (n=30) |
|---|---|---|
| WOMAC – pain | 1.24±0.02 | 8.39±2.41 |
| WOMAC – stiffness | 1.63±0.41 | 11.31±3.22 |
| WOMAC – physical function | 7.82±2.31 | 15.71±5.74 |
| Total WOMAC score | 9.12±3.14 | 29.39±11.36 |

Results indicate that RA had an impact on Quality of Life; it was also seen that the duration of disease mainly influenced the impact. Hence, the discussion below is focused on this aspect concerning Quality of Life.

Our study highlighted that the characteristic features of RA usually involve the following problems: severe pain, stiffness, deformities, swelling of joints, limitation of physical activity, and consequently decreased quality of life (QoL).

**Table 3:** Quality of Life Scores under various parameters in healthy control group and Rheumatoid arthritis (RA) patients' group.

| Parameters | Control Group (n=30) | Patient Group (n=30) |
|---|---|---|
| Physical functioning | 63.97±11.97 | 41.28±5.29 |
| Role limitation due to physical health | 62.71±10.28 | 21.43±2.37 |
| Emotional well-being/mental health | 59.22±9.82 | 35.71±5.91 |
| Role limitation due to emotional problems | 57.39±11.24 | 45.83±6.34 |
| Energy/vitality | 68.27±13.29 | 39.27±8.49 |
| Social well-being | 54.92±8.91 | 33.28±7.29 |
| Bodily pain | 31.24±4.21 | 38.36±8.21 |
| General health | 72.43±14.26 | 40.79±9.24 |

The perception of life satisfaction was also significantly lower in the RA patients. Satisfaction with Life Scale (SWLS) is a short 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life.

**Table 4:** Life Satisfaction Scores under various parameters in healthy control group and Rheumatoid arthritis (RA) patients' group.

| Parameters | Control Group (n=30) | Patient Group (n=30) |
|---|---|---|
| Extremely Dissatisfied | 1.01±0.2 | 2.47±0.97 |
| Dissatisfied | 1.43±0.37 | 6.24±1.08 |
| Slightly dissatisfied | 8.71±2.41 | 5.14±1.27 |
| Neutral | 0 | 2.39±1.41 |
| Slightly Satisfied | 9.72±2.21 | 6.32±1.37 |
| Satisfied | 6.27±1.02 | 5.92±1.27 |
| Extremely Satisfied | 8.36±2.37 | 1.47±0.21 |

**Table 5:** Distribution of the subjects according to the Anxiety, Depression and selected parameters of Quality of Life scores.

| Parameters | Control Group (n=30) | Patient Group (n=30) |
|---|---|---|
| Physical functioning | 63.97±11.97 | 41.28±5.29 |
| Bodily pain | 31.24±4.21 | 38.36±8.21 |
| General health | 72.43±14.26 | 40.79±9.24 |
| Anxiety Scores | 2.64±0.49 | 14.52±0.96 |
| Depression Scores | 2.72±0.89 | 11.40±0.82 |
| Panic Disorder | 2.44±0.92 | 10.44±0.71 |

Depression was significantly correlated to the quality of life. Anxiety was also negatively correlated to the quality of life. Anxiety and depressed patients differed significantly from other RA patients in terms of quality of life.

## Discussion

In this study, we have noted that the presence of comorbidity, extra-articular manifestations, functional disability, moderate-to-high activity, lower education and late initiation of treatment were the factors associated with unsatisfactory QoL in different domains. A study conducted by Goma *et al.* [6] depicted that every aspect of QoL was impaired by RA, especially mental health, social health, environmental health, physical function, physical disability, and even sexual health.

In the present study, females were suffering more depression and anxiety, which conforms with the general trend. Stress likely may be playing a significant part in the occurrence of mixed anxiety and depression. Another study by Katchamart *et al.* [7] showed that disease severity, functional disability, depression, and anxiety were negatively associated with QoL of patients with RA.

The final assessment of the results obtained on the SF-36 questionnaire between RA patients and healthy subject's groups have shown significant differences in almost all scales; particularly limitations due to physical functioning, social functioning, and pain; however, by using a suitable statistical test, this difference was statistically significant.

The Quality of Life (QoL) is based on various components like independence in the performance of daily activities, social relationships, environment, physical and mental health. The physical and mental health affliction in quality of life hinders an individual's participation in the activities of daily living [8]. Increased limitations in independent physical activity interfere with the daily routine of living and recreation. This affection of daily activities reduces an individual's physical and social functioning rooting towards mental and psychosocial problems and physical pain.

The experimental design and the method of data collection used proved to be helpful inaptly and appropriately classifying and grading the psychiatric comorbidities in a sample population of RA in an Indian setup [9, 10]. The addition of a control group helped to compare the results obtained for the diseased population with that of the general population.

The combined effect of anxiety and depression and associated with pain seem to be contributing to the poor Quality of Life in those subjects having both anxiety and depression.

## Conclusions

The Quality of Life in the RA patients' group and its improvement should imply the individual's personal experience. Furthermore, the integrative therapeutic model should include professional counselling, psychosocial support, activities to improve functional abilities. RA patients must be provided with modern medical facilities and complementary therapies to alleviate the symptoms of RA.

Assessing the influence of different interventions on the QoL should also be an essential task that can help define a holistic and integrative model of treatment and rehabilitation for RA patients. Further studies into these domains for patients with RA are needed to establish the clinical and epidemiological factors that play a role in the course and prognosis of the disorder.

Knowledge about the impact of various parameters on the QoL in RA patients is essential in considering the predictors of QoL and planning of therapeutic and rehabilitation interventions, focusing on pain relief, improving functional ability, and encouraging social interaction and supporting positive emotional support responses.

## References

1. World Health Organization Chronic diseases and health promotion. Chronic rheumatic conditions. Available from: http://www.who.int/chp/topics/rheumatic/en/. [Last accessed on 2017 Apr 12].
2. Mandal M, Dasgupta A, Dutt D, Taraphdar P, Ghosh P, Paul B. Quantification of health-related quality of life among patients with rheumatoid arthritis: An institution-based study in Kolkata, West Bengal. J Family Med Prim Care,2020:9:3970-6.
3. Harsha Kumar HN, Nagaraj K, Luthra K, Gupta P,

Sapar P, Gupta S, *et al*. Health-related quality of life among osteoarthritis patients attending primary care clinics of Mangalore city. Int J Med Public Health,2015:5:55-8.
4. The World health organization quality of life assessment (WHOQOL): Position paper from the World Health Organization. Soc Sci Med,1995:41:1403-9.
5. Bedi GS, Gupta N, Handa R, Pal H, Pandey RM. Quality of life in Indian patients with rheumatoid arthritis. Qual Life Res,2005:14:1953-8. 15.
6. Goma SH, Razek MR, Abdelbary NM. Impact of rheumatoid arthritis on the quality of life and its relation to disease activity. Egypt Rheumatol Rehabil,2019:46:304-12.
7. Katchamart W, Narongroeknawin P, Chanapai W, *et al*. Health-related quality of life in patients with rheumatoid arthritis. BMC Rheumatol,2019:3:34.
8. Kumar BS, Suneetha P, Mohan A, Kumar DP, Sarma KV. Comparison of disease activity score in 28 joints with ESR (DAS28), Clinical disease activity index (CDAI), Health assessment questionnaire disability index (HAQ-DI) and Routine assessment of patient index data with 3 measures (RAPID3) for assessing disease activity in patients with rheumatoid arthritis at initial presentation. Indian J Med Res,2017:146(Suppl S2):57-62.
9. Walankar P, Panhale V, Koli A. Pain, functional disability and quality of life in knee osteoarthritis. Int J Health Sci Res,2018; 8(7):177-181.
10. Christy V, Melvin KG, Anand K, Paul P, Annisa MT, Farah NF, *et al*. Quality of life among patients with arthritis seeking outpatient care at a government secondary health care centre, Anekal taluk. Int J Community Med Public Health,2018:5:1963-7.